

AMENDMENT UNDER 37 C.F.R. §1.111
U.S. SERIAL NO. 10/694,907

ART UNIT 1733
Q78094

AMENDMENTS TO THE DRAWINGS

Substitute Fig. 13, which corrects the thickness t_1 of the bead portion reinforcing layer 34, is submitted herewith.

Attachment: One (1) Replacement Sheet illustrating Figs. 13-15

REMARKS

Claims 12-21 are presently pending in this application. Claims 1-11, 22 and 29 are cancelled, and claims 23-28 and 30-34 have been withdrawn. The election of claims 12-21 is hereby affirmed.

Claim 12 is the only independent claim. Claims 13-21 all depend, directly or indirectly, from claim 12. All claims stand rejected on prior art grounds. There are no other rejections.

The Examiner compares the construction in Fig. 1 of Powell to the invention recited in independent claim 12 of the present application. Specifically, the Examiner argues that Powell discloses a bead 2, a carcass 4 with wrap part 5, a bead filler 3, and a bead reinforcing layer 8. The Examiner admits that Powell does not teach or suggest the rubber layer (see element 35 in Fig. 13 of the present application, as an example) recited in claim 12. For that missing feature, the Examiner relies on Fukuzawa (JP '915), specifically identifying Fig. 1.

The so-called "bead filler" 3 in Powell is actually described in that reference as a "composite coiled wire bead wire" (see page 1, right column, lines 75-85). That is, numeral 3 in Fig. 1 of Powell is not a bead filler, but rather a composite coiled wire bead wire. In Powell, the wrap part of the carcass ply 4 is sandwiched between the solid steel bead wire 2 and the composite coiled wire bead wire 3 constituting the bead core. In contrast, in the present invention,

the wrap part of the carcass ply is sandwiched between the bead core and the bead filler. The bead filler (33) and bead core (31) are separate and distinct as described in the present application, and are recited as separate elements in claim 12. Clearly then, the invention in claim 12 is significantly different from Powell.

Furthermore, the so-called “bead reinforcing layer” 8 in Powell is actually described in that reference as a “chafer reinforcement” (see page 2, left column, lines 37-46). This chafer reinforcement 8 does not extend on both sides of the bead 2. In contrast, in Fig. 13 of the present application, for example, the bead portion reinforcing layer 34 does extend on both sides (i.e., inner and outer sides) of the bead 31. Claim 12 is hereby amended to clarify this feature.

With regard to claim 15, it is noted that the thickness t_1 of the bead portion reinforcing layer 34 shown in Fig. 13 is mislabeled. A corrected drawing figure is attached hereto.

Regarding the rubber layer recited in claim 12, Fukuzawa discloses in Fig. 1 a stiffener section 16, which is comprised of a soft stiffener 18 (JIS hardness 45-60°) and a hard stiffener 20 (JIS hardness 80-95°), and a middle hardness stiffener 24 (JIS hardness 65-75°), that is arranged in the vicinity of the turnup end 12B of the carcass ply 12. The arrangement of the middle hardness stiffener or rubber layer is to eliminate the concentration of strain in the vicinity of the turnup end.

On the contrary, the rubber layer of the present invention is arranged between the bead filler and the bead portion reinforcing layer to control the shearing strain therebetween, which is entirely different from the rubber layer of Fukuzawa in the arrangement, function and effect.

For at least the above reasons, Applicants respectfully submit that the present invention as recited in claim 12 would not have been obvious (absent the proscribed use of hindsight) from the combination of Powell and Fukuzawa.

As for claims 18-21,¹ the Examiner relies merely on a drawing figure (Fig. 1) of Powell. At least as to claims 19-21, this rejection appears to be based on pure speculation. In fact, Powell is completely silent regarding the features recited in these dependent claims.

The Examiner relies on Miyazono and Kaga relative to dependent claims 16 and 17, which are directed to the positioning and size of the rubber layer.

Miyazono discloses that rubber divided into at least two parts (inner face side part 4-1, outer face side part 4-2) is arranged so as to cover a radially outward turnup end portion of the carcass ply 2 or a radially outward end portion of the bead portion reinforcing layer 3 (see Figs. 1, 5 and 6). Also, Miyazono discloses that a modulus of the inner face side part 4-1 is made softer than a modulus of coating rubber for the carcass ply 2 or the reinforcing layer 3 and a modulus of the outer face side part 4-2 is made harder than the modulus of coating rubber for

¹ In order to provide antecedent basis for the "bead portion" in claim 18, claim 12 is amended as shown above. Additional amendments are made hereinabove to correct minor errors.

the carcass ply 2 or the reinforcing layer 3. The part 4-1 is arranged in the inner face side of the tire largely influenced through the compression deformation to sufficiently absorb the compression deformation, while the part 4-2 is arranged in the outer face side of the tire largely influenced through the shearing deformation, whereby the total amount of the deformations at the end portion of the carcass ply or bead portion reinforcing layer is decreased.

Therefore, the rubber or the rubber layer described in Miyazono is entirely different from the rubber layer of the present invention (not only the control of shearing strain between bead filler and bead portion reinforcing layer, but also reduction of stepwise rigidity between bead filler and side rubber) in both function and effect.

As for Kaga, this reference discloses that the rubber stock 6 is arranged so as to cover the upper end portion of the turnup portion 2a and the upper end of the fiber cord reinforcing layer 3b. The steel cord reinforcing layer 3a is existent between the turnup portion 2a and the fiber cord reinforcing layer 3b. Therefore, Kaga does not teach or suggest that the rubber stock 6 is arranged between the bead filler (5a, 5b) and the steel cord reinforcing layer 3a.

Accordingly, Kaga is also believed to be entirely different from the present invention.

Finally, as to independent claim 12 (as well as dependent claims 15-17), the Examiner also relies on Kaga in view of Miura. Kaga is discussed above. Miura merely discloses that the wrap part 16 of the carcass ply 10 is pinched between the bead core 18 and the bead apex (bead filler) 20. Applicants respectfully submit that the combination proposed by the Examiner would amount to a total reworking of the carcass 2a in Kaga, and that such a total reworking would not

have been suggested absent the proscribed use of hindsight. Moreover, in reworking carcass 2a to include the wrap part, the relative positioning of the fiber cord reinforcing layer 3b and the upper bead filler 5b may have to be adjusted in a different manner. One would be left to speculate as to how to make the proposed modification without destroying the function and advantages of Kaga's tire. Also, it is noted that the fiber cord reinforcing layer 3b in Kaga does not appear to extend on both sides of the bead core 4. Thus, both Powell and Kaga are believed to be deficient in this regard (see amended claim 12).

Therefore, Applicants respectfully submit that the present invention would not have been obvious from the combination of Kaga and Miura. That is, even assuming *arguendo* that these references could have been combined, the combination would not lead one of ordinary skill to the claimed invention.

In view of the preceding amendments and remarks, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue that the Examiner feels may be best resolved through a personal or telephonic interview, he is kindly requested to contact the undersigned attorney at the local telephone number listed below.

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The USPTO is directed and authorized to charge all required fees (except the Issue/Publication Fees) to our Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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23373

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Date: July 1, 2005